Research Cruise Plan

Channel Islands National Marine Sanctuary

Prepared by	Harry R. Carter
Date	Feb. 29, 2000

1. VESSEL	R/V Ballena	2. PROJECT DATES	April 10-May 6 2000
3. PROJECT TITLE	Baseline population data on Xantus' Murrelets at Anacapa Island in spring-summer 2000, Humboldt State University, Department of Wildlife.		
4. ITINERARY	April 10-14, Anacapa and Santa Barbara Island (possibly east Santa Cruz Island): radar work , at-sea captures, blood sampling, cave surveys. Depart Santa Barbara on 4/10. Run into Ventura on 4/12 (early morning) for fuel and personnel change. Depart Ventura and run to Santa Barbara Island on 4/12. Return to Anacapa on 4/13. Return to Santa Barbara on 4/14. April 18-22, Anacapa Island: radar work and vocalization surveys. Depart Santa Barbara on 4/18. Return to Santa Barbara on 4/22. April 24-28, Anacapa Island: radar work, at-sea captures, cave surveys. Depart Santa Barbara on 4/24. Return to Santa Barbara on 4/28. May 2-6, Anacapa Island: radar work and vocalization surveys. Depart Santa Barbara on 5/2. Return to Santa Barbara on 5/6.		
5. PROJECT LOCATION(S): LATITUDE AND LONGITUDE COORDINATES	Three radar stations at 100-200 m off of the south side of West, Middle, and East Anacapa Island. If weather allows, we may try some stations on the north side as well. At Santa Barbara Island, we would work in the anchorage areas and, if at Santa Cruz Island, we would work near Scorpion Rock. At-sea captures and vocalization surveys will be conducted from Zodiacs and will occur at various locations around Anacapa and near the anchorage at Santa Barbara Island.		
6. RESEARCH QUESTION (IF APPLICABLE)	N/A, see #7 below		
7. PURPOSE	To determine baseline population statistics of Xantus' Murrelets on Anacapa Island, prior to the Black Rat eradication planned for the Fall of 2000. This will allow for accurate analysis of the current and previous rat influence on population size and distribution.		
8. PROJECT PROCEDURE	***2000 Radar Data Collection***: We will use an ornithological surveillance radar to determine the number of flying murrelets visiting specific portions of Anacapa Island in 2000. Radar likely will detect: 1) all murrelets flying towards Anacapa Island (within 1 km) and landing on the water to attend at-sea congregations in the evening and at night; and 2) a portion of the murrelets flying from the water up to or departing from nesting slopes at night. We will mount a specialized marine radar system above the main wheelhouse on the R/V *Ballena* (research vessel of		

	the Channel Islands National Marine Sanctuary). The *Ballena* will be anchored within 100-200 m of shore at three stations on the south side of West, Middle and East Anacapa. From these three stations, we will survey almost all of the more protected south side of Anacapa Island where radar images are likely to be more stable due to less wave action on the vessel (and radar). In addition, murrelets are currently known to nest in sea caves mainly on the south side. If conditions permit, we also may attempt to conduct some work on the north side. Murrelet colony attendance patterns are affected by moonlight, boat lights/disturbance, and time of the breeding season. We will conduct radar surveys over a four-week period from 10 April to 6 May 2000. This period corresponds to when: 1) highest numbers of murrelets generally are expected to attend colonies between the pre-laying colony attendance and peak colony departure (i.e., including attendance of at-sea congregations and associated nesting areas on land). The radar vessel will need to minimize all lights and noise during nocturnal work and not be anchored near other vessels. If squid fishing boats are present near Anacapa Island, we will investigate the possible effects of light disturbance on murrelet attendance patterns. In 2000, we will examine attendance patterns at each location throughout each survey night to determine the best time period within the night to conduct such surveys in the future. ***2000 Vocalization Surveys**:* On the same nights as radar work (especially during the weeks of 18-22 April and 2-6 May), we also will conduct nocturnal vocalization surveys from a Zodiac inflatable boat throughout the night in the same general vicinity as the radar work. The Zodiac will move 200-300 m away from the radar boat before conducting 15-minute surveys. These surveys will be conducted hourly from 22:00-02:00 (i.e., 5 times per night). These data will be compared to radar count data. Vocalization surveys can be conducted with less cost and effort and thus may be repeated more frequently but are more variable. ***2000 At-Sea Captures**:* In two weeks (10-14 April and 24-28 April), we will conduct at-sea captures of Xantus' Murrelets, using the nightlighting technique (spot lights and dip nets). Murrelets will be weighed, measured, brood patch examined, blood sample taken (for sexing), and banded before release. Captures will occur away from radar work (if conducted on the same night) to prevent disruption. For capture, handling, and banding of murrelets, we will obtain permits from the California Department of Fish and Game and U.S. Geological Survey. By capturing a sample of murrelets per week, we can better determine timing of breeding and establish colony fidelity and survival through recapture of banded birds within and between years. We will cooperate with the University of California Davis to take blood samples. ***2000 Sea Cave Nest Surveys***: In two weeks (10-14 April and 24-28 April), we will visit and determine numbers of murrelet nests in all sea caves with known nesting and suitable unused habitat at Anacapa Island. To reduce possible disturbance to murrelets, caves will be visited only 1-2 times. For landings on Anacapa Island, we will obtain permission from Channel Islands National Park. This information will help determine timing of breeding and confirm the continued existence of a small breeding population at Anacapa Island.

9. PERSONNEL	10-11 April: H. Carter, D.Whitworth, T. Hamer, D. Meekins, and F. Gress. Plus NOAA (skipper and S. Fangman). 12-14 April: H. Carter, D. Whitworth, T. Hamer, D. Meekins, F. Gress, S. Newman, Newman Assistant, and K. Nelson. Plus NOAA (skipper & S. Fangman). 18-22 April: D. Whitworth, D. Meekins, plus three additional (TBD). Plus NOAA (skipper & crew) 24-28 April: H. Carter, D.Whitworth, Hamer Assistant, B. Keitt, I. Manley, Manley Assistants (2), B. McIver, J. Mason. Plus NOAA (skipper & crew). 2-6 May: D. Whitworth, Hamer Assistant, G. Howald, and P. Kelly. Plus NOAA (skipper & crew). Master Personnel List Harry Carter (Humboldt State University, HSU) Sarah Fangman (NOAA, CINMS) Frank Gress (California Institute of Environmental Studies) Tom Hamer & Doug Meekins (Hamer Environmental Ltd.) Greg Howald (Island Conservation and Ecology Group) Brad Keitt (Island Conservation and Ecology Group)

	Paul Kelly (California Dept. Fish & Game; American Trader Trustee Council) Irene Manley & 2 assistants (Simon Fraser University) John Mason (HSU) Bill McIver (HSU) Scott Newman (University of California Davis employee) Newman Assistant (HSU volunteer) Kim Nelson (Oregon State University) Darrell Whitworth (HSU) Other Assistance:
10. EQUIPMENT/ INSTRUMENTATION	A ornithological surveillance radar will be mounted atop the above the main wheelhouse. Two Zodiacs (including Ballena Zodiac and 1 HSU Zodiac) will be used for at-sea captures, vocalization surveys, and cave searches. The HSU Zodiac, 3-4 outboard engines, gasoline, and gear in waterproof containers will be stored on the back deck during transportation to mainland. The Ballena will be used mainly as a platform for nocturnal work at Anacapa Island.
11. CONTACT INFORMATION	Harry Carter U.S. Geological Survey 6924 Tremont Road Dixon, CA 95620 Harry_Carter@usgs.gov Harry_Carter@usgs.gov phone 707-678-0682(x625)
12. NOTES/COMMENTS	

Date received: Action: